

## REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the Office Action dated March 22, 2006, the Examiner rejected claim 7, under 35 U.S.C. § 112, ¶2, as allegedly being indefinite; rejected claims 1 and 3-9, under 35 U.S.C. § 102(b), as allegedly being anticipated by Mains '825 (U.S. Patent No. 1,824,825); and rejected claim 2, under 35 U.S.C. § 103(a), as allegedly being unpatentable over Mains '825 in view of Goldman '522 (U.S. Patent No. 3,846,522).

By this Amendment, independent claim 1 has been amended and claims 2-3 have been cancelled without prejudice or disclaimer. Applicants submit that no new matter has been introduced. As such, claims 1 and 4-9 are currently presented for examination, of which claim 1 is the sole independent claim.

Applicants respectfully traverse the prior art rejections, under 35 U.S.C. § 102(b), § 103(a) for the reasons presented below.

### I. Prior Art Rejections Under 35 U.S.C. § 102(b), § 103(a).

As indicated above, amended independent claim 1 is directed to an injection molding process for producing a disk-shape resin molded article. To this end, claim 1 positively recites that the pressing core is advanced to an original position separated from the fixed mold member with a distance corresponding to the volume of the injected molten resin, the molten resin is injected into the cavity in response to the completion of the advanced movement of the pressing core to the original position, and the pressing core is further advanced to a predetermined position which corresponds to the contraction volume or shrinking amount of the injected molten resin in response to the injection of the molten resin. Claim 1 further positively recites that in the molding process, the web site and at least one site selected from the group consisting of an outer edge side of the boss and an inner edge of the rim are pressed in a thickness direction. These features are amply supported by the embodiments described in the Specification. (*See*, Original Specification: page 11, lines 11-12; page 12, line 16; page 14, lines 23-24).

In contrast to the Examiner's assertions, there is nothing in the asserted references that teach all of the elements recited in claim 1, including the features indicated above. In particular, the Mains '825 reference discloses that in forming the finished gear blank, the hub 6 is placed on the central stud 5 which extends upwardly from the bottom of the mold. The lower shrouds or discs 11, the previously formed unitary structure consisting of the rim and web, and upper shrouds or discs 12, all impregnated with a suitable binder, such as phenolic condensation product, are disposed around the central hub. (See, Mains '825: page 2, lines 43-52). Mains '825 further discloses that the assembled parts of the gear are then subjected to heat and pressure, the heat causing the binder to flow and the pressure compacting the softened material. Upon subsequent and continued application of heat and pressure, the entire mass solidifies to form a composite integral structure. (See, Mains '825: page 2, lines 63-69; FIG. 5).

In so doing, Mains '825 clearly fails to teach or suggest an *injection molding process* for producing a disk-shape resin molded article, as required by claim 1. That is, Mains '825 specifically discloses a process in which fibrous material impregnated with a phenolic condensation product (*i.e.*, thermosetting resin) and the mass is solidified by continued application of heat and pressure to form the composite structure. It will be appreciated by artisans of ordinary skill that the Mains '825 process is entirely different from the claimed injection molding process.

Moreover, there is nothing in Mains '825 that teaches or suggests that the pressing core is further advanced to a predetermined position which corresponds to the contraction volume or shrinking amount of the injected molten resin in response to the injection of the molten resin, as required by claim 1. Nor is there anything in Mains '825 that remotely teaches that, in the molding process, the web site and at least one site selected from the group consisting of an outer edge side of the boss and an inner edge of the rim are pressed in a thickness direction, as also required by claim 1.

Applicants submit that the Goldman '522 reference fails to both cure the deficiencies of the Mains '825 reference identified above as well as teach each and every element of the claimed invention in its own right. In particular, Goldman '522 specifically discloses that an important aspect of the present invention is the mold does not need to be retained in the press to sustain molding pressures, once the material has been formed, as it can be cooled outside the press. Goldman '522 goes on to admit that such a process "is *contrary to existing*

*processes*, where the equipment is tied up until such time as the material is ready to be ejected, whether the *process is injection molding*, compression or transfer molding, or forging.” (See, Goldman ‘522: col. 8, lines 24-33)(*emphasis added*). Along these lines, Goldman ‘522 further discloses a process in which comminuted thermoplastic resin is heated and a forging force is applied to form the comminutive resin article. (See, Goldman ‘522: col. 8, lines 13-21). Clearly, not only does Goldman ‘522 fail to teach *injection molding process*, as required by claim 1 – it effectively teaches away from such a process.

In addition, Goldman ‘522 discloses that the mold is advanced into the forming portion and is removed, once the resin becomes an integral mass. This is because the resin can be rapidly formed from a comminuted state to a compacted, fused mass and the molded matter is removed from the mold immediately after forming. (See, Goldman ‘522: col. 8, lines 13-21). As such, Goldman ‘522 fails to teach the pressing as claimed. In other words, Goldman ‘522 is devoid of teaching that the pressing core is further advanced to a predetermined position which corresponds to the contraction volume or shrinking amount of the injected molten resin in response to the injection of the molten resin, as required by claim 1. Goldman ‘522 is also devoid teaching that, in the molding process, the web site and at least one site selected from the group consisting of an outer edge side of the boss and an inner edge of the rim are pressed in a thickness direction, as also required by claim 1.

For at least these reasons, Applicants submit that none of these references, whether taken alone or in reasonable combination, teach the claimed combination of elements recited by amended claim 1. Thus, claim 1 is patentable over the references. And, because claims 4-9 depend from claim 1, claims 4-9 are also patentable by virtue of dependency as well as for their additional recitations. Accordingly, Applicants requests the immediate withdrawal of the prior art rejections of claims 1 and 4-9.

## II. Conclusion.

All matters shaving been addressed and in view of the foregoing, Applicant respectfully request the entry of this Amendment, the Examiner’s reconsideration of this application, and the immediate allowance of all pending claims.

Applicants’ Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. If any point remains in issue in which the Examiner

feels may be best resolved through a personal or telephone interview, please contact the Undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number **03-3975**. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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